

FIG. 1

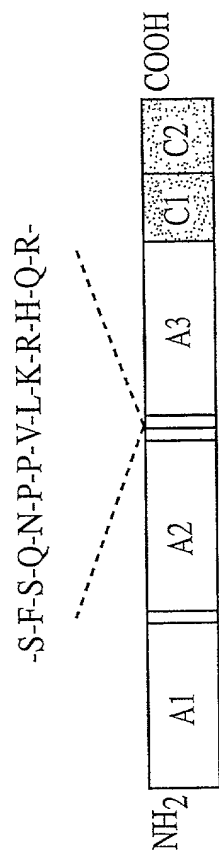


FIG. 2

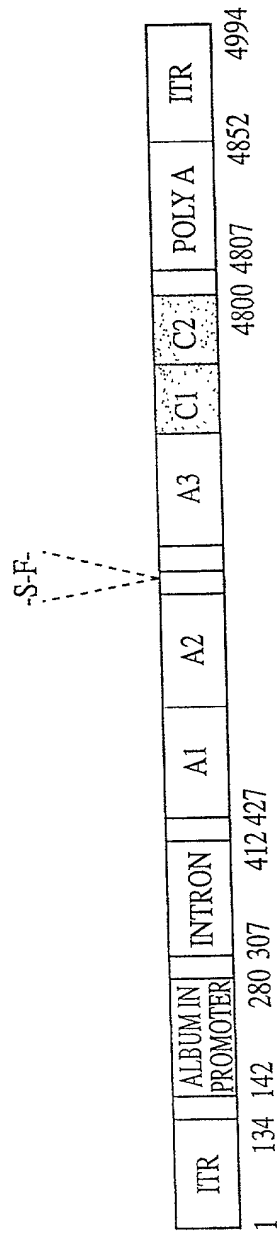


FIG. 3

FIG. 4 is a schematic diagram of a DNA construct. The construct is a linear sequence of DNA segments. The segments are labeled as follows: ITR (16-145), 159-287, PROMOTER (287-413), A1, A2, A3, C1, C2, POLY A (4786-4793), 4840-4849, and ITR (4978). The sequence is flanked by ITR (Inverted Terminal Repeats) at both ends. The sequence is also flanked by a PROMOTER region. The sequence is also flanked by a POLY A region. The sequence is also flanked by a C1 and C2 region. The sequence is also flanked by an A1, A2, and A3 region. The sequence is also flanked by an ITR region. The sequence is also flanked by a 16-145 region. The sequence is also flanked by a 159-287 region. The sequence is also flanked by a 287-413 region. The sequence is also flanked by a 4786-4793 region. The sequence is also flanked by a 4840-4849 region. The sequence is also flanked by a 4978 region.

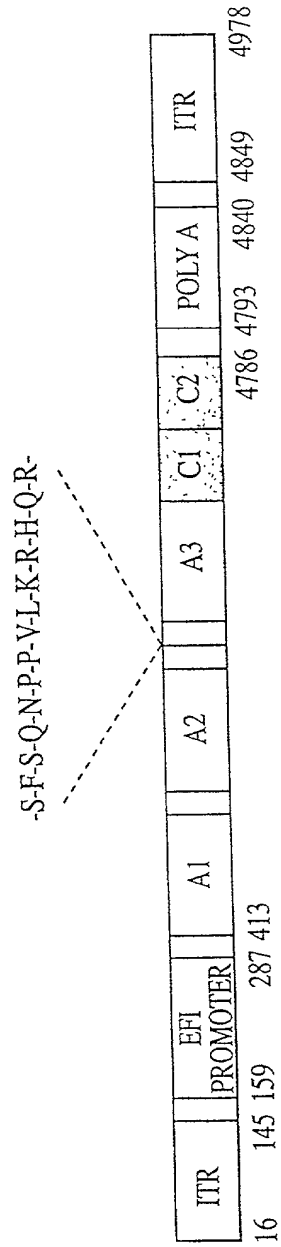


FIG. 4

FIG. 5A
FIG. 5B
FIG. 5C
FIG. 5D

FIG. 5

CAGCTGCGCGCTCGCTCGCTCACTGAGGCCGCCCGGGCAAAGCCCGGGCGTCGGGCGACCTTTGGTCGCCCCGGCCTCAGT
GAGCGAGCGAGCGCGCAGAGAGGGAGTGGCCAACTCCATCACTAGGGGTTCCCTGCGGCCGCCAGGGAATGTTTGTCTT
AAATACCATCCAGGGAATGTTTGTCTTAAATACCATCCAGGGAATGTTTGTCTTAAATACCATCTACAGTTATTGGTT
AAAGAAGTATATTAGAGCGAGTCTTCTGCACACAGATCACCTTTCCGGGTGCCGCCCTAGGCAGGTAAGTGCCGTGTG
TGGTTCCCGCGGGCCTGGCCTCTTTACGGGTATGGCCCTTGCGTGCCTTGAATTACTGACACTGACATCCACTTTTTCT
TTTTCTCCACAGGTATCGATTCCACCATGCAAATAGAGCTCTCCACCTGCTTCTTCTGTGCCTTTTGCGATTCTGCTTT
AGTGCCACCAGAAGATACTACCTGGGTGCAGTGGAACTGTCATGGGACTATATGCAAAGTGATCTCGGTGAGCTGCCTGT
GGACGCAAGATTTCTCTAGAGTGCCAAAATCTTTTCCATTCAACACCTCAGTCGTGTACAAAAGACTCTGTTTGTAG
AATTCACGGATCACCTTTTCAACATCGCTAAGCCAAGGCCACCTGGATGGGTCTGCTAGGTCCTACCATCCAGGCTGAG
GTTTATGATACAGTGGTCATTACACTTAAGAACATGGCTTCCCATCCTGTGTCAGTCTTCATGCTGTTGGTGTATCCTACTG
GAAAGCTTCTGAGGGAGCTGAATATGATGATCAGACCAGTCAAAGGGAGAAAGAAGATGATAAAGTCTTCCCTGGTGGAA
GCCATACATATGTCTGGCAGGTCCTGAAAGAGAATGGTCCAATGGCCTCTGACCCACTGTGCCTTACCTACTCATATCTT
TCTCATGTGGACCTGGTAAAAGACTTGAATTGAGCCCTCATTGGAGCCCTACTAGTATGTAGAGAAGGGAGTCTGGCCAA
GGAAAAGACACAGACCTTGCACAAATTTATACTACTTTTTGCTGTATTTGATGAAGGGAAAAGTTGGCACTCAGAAACAA
AGAACTCCTTGATGCAGGATAGGGATGCTGCATCTGCTCGGGCCTGGCCTAAAATGCACACAGTCAATGGTTATGTAAAC
AGGTCTCTGCCAGGTCTGATTGGATGCCACAGGAAATCAGTCTATTGGCATGTGATTGGAATGGGCACCACTCCTGAAGT
GCACTCAATATTCCTCGAAGGTCACACATTTCTTGTGAGGAACCATCGCCAGGCGTCCTTGGAATCTCGCCAATAACTT
TCCTTACTGCTCAAACACTCTTGATGGACCTTGGACAGTTTCTACTGTTTTGTATATCTCTTCCACCAACATGATGGC
ATGGAAGCTTATGTCAAAGTAGACAGCTGTCCAGAGGAACCCCAACTACGAATGAAAAATAATGAAGAAGCGGAAGACTA
TGATGATGATCTTACTGATTCTGAAATGGATGTGGTCAGGTTTGATGATGACAACTCTCCTTCCCTTATCCAAATTCGCT
CAGTTGCCAAGAAGCATCCTAAACTTGGGTACATTACATTGCTGCTGAAGAGGAGGACTGGGACTATGCTCCCTTAGTC
CTCGCCCCGATGACAGAAGTTATAAAAGTCAATATTTGAACAATGGCCCTCAGCGGATTGGTAGGAAGTACAAAAAGT
CCGATTTATGGCATAACAGATGAAACCTTTAAGACTCGTGAAGCTATTACAGCATGAATCAGGAATCTTGGGACCTTTAC
TTTATGGGGAAGTTGGAGACACACTGTTGATTATATTTAAGAATCAAGCAAGCAGACCATATAACATCTACCCTCACGGA
ATCACTGATGTCCGTCCTTTGTATTCAAGGAGATTACCAAAAGGTGTAAACATTTGAAGGATTTTCCAATTCGTCAGG
AGAAATATTCAAATATAAATGGACAGTGAAGTGTAGAAGATGGGCCAACTAAATCAGATCCTCGGTGCCGTGACCCGCTATT
ACTCTAGTTTCGTTAATATGGAGAGAGATCTAGCTTCAGGACTCATTGGCCCTCTCCTCATCTGCTACAAAGAATCTGTA
GATCAAAGAGGAAACCAGATAATGTCAGACAAGAGGAATGTCATCCTGTTTTCTGTATTTGATGAGAACCGAAGCTGGTA
CCTCACAGAGAATATACAACGCTTTCTCCCCAATCCAGCTGGAGTGCAGCTTGAGGATCCAGAGTTCCAAGCCTCCAACA
TCATGCACAGCATCAATGGCTATGTTTTGATAGTTTGCAGTTGTCAGTTTGTTCATGAGGTGGCATACTGGTACATT
CTAAGCATTGGAGCACAGACTGACTTCCTTTCTGTCTTCTCTCTGGATATACCTTCAAACACAAAATGGTCTATGAAGA

FIG. 5A

CACACTCACCCCTATTCCCATTCTCAGGAGAACTGTCTTCATGTGCGATGGAAAACCCAGGTCTATGGATTCTGGGGTGCC
 ACAACTCAGACTTTTCGGAACAGAGGCATGACCGCCTTACTGAAGGTTTCTAGTTGTGACAAGAACACTGGTGATTATTAC
 GAGGACAGTTATGAAGATATTTTCAGCATACTTGCTGAGTAAAAACAATGCCATTGAACCAAGAAGCTTCGAAATAACTCG
 TACTACTCTTCAGTCAGATCAAGAGGAAATTGACTATGATGATACCATATCAGTTGAAATGAAGAAGGAAGATTTTGACA
 TTTATGATGAGGATGAAAATCAGAGCCCCCGCAGCTTTCAAAGAAAACACGACACTATTTTATTGCTGCAGTGGAGAGG
 CTCTGGGATTATGGGATGAGTAGCTCCCCACATGTTCTAAGAAACAGGGCTCAGAGTGGCAGTGTCCCTCAGTTCAAGAA
 AGTTGTTTTCCAGGAATTTACTGATGGCTCCTTTACTCAGCCCTTATACCGTGGAGAACTAAATGAACATTTGGGACTCC
 TGGGGCCATATATAAGAGCAGAAGTTGAAGATAATATCATGGTAACTTTCAGAAATCAGGCCTCTCGTCCCTATTCTCTC
 TATTCTAGCCTTATTTCTTATGAGGAAGATCAGAGGCAAGGAGCAGAACCTAGAAAAAACTTTGTCAAGCCTAATGAAAC
 CAAAACCTACTTTTGGAAAGTGCAACATCATATGGCACCCACTAAAGATGAGTTTGAAGTCAAAGCCTGGGCTTATTTCT
 CTGATGTTGACCTGGAAAAAGATGTGCACTCAGGCCTGATTGGACCCCTTCTGGTCTGCCACACTAACACACTGAACCT
 GCTCATGGGAGACAAGTGACAGTACAGGAATTTGCTCTGTTTTTACCATCTTTGATGAGACCAAAAGCTGGTACTTCAC
 TGAAAAATATGGAAAGAACTGCAGGGCTCCCTGCAATATCCAGATGGAAGATCCCACTTTTAAAGAGAATTATCGCTTCC
 ATGCAATCAATGGCTACATAATGGATACACTACCTGGCTTAGTAATGGCTCAGGATCAAAGGATTCGATGGTATCTGCTC
 AGCATGGGAGCAATGAAAACATCCATTCTATTCTTTTCTAGTGGACATGTGTTCACTGTACGAAAAAAGAGGAGTATAA
 AATGGCACTGTACAATCTCTATCCAGGTGTTTTTGGAGACAGTGGAAATGTTACCATCCAAAGCTGGAATTTGGCGGTGG
 AATGCCTTATTGGCGAGCATCTACATGCTGGGATGAGCACACTTTTTCTGGGTACAGCAATAAGTGTGAGTCCCTTG
 GGAATGGCTTCTGGACACATTAGAGATTTTTCAGATTACAGCTTCAGGACAATATGGACAGTGGGCCCCAAAGCTGGCCAG
 ACTTCATTATTCCGGATCAATCAATGCCTGGAGACCAAGGAGCCCTTTTCTGGATCAAGGTGGATCTGTTGGCACCAA
 TGATTATTACGGCATCAAGACCCAGGGTGGCCGTGAGAAGTTCTCCAGCCTCTACATCTCTCAGTTTATCATCATGTAT
 AGTCTTGATGGGAAGAAGTGGCAGACTTATCGAGGAAATCCACTGGAACCTTAATGGTCTTCTTTGGCAATGTGGATTC
 ATCTGGGATAAAACACAATATTTTAAACCCTCCAATTATTGCTCGATACATCCGTTTGCACCCAACCTATTATAGCATTC
 GCAGCACTCTTCGCATGGAGTTGATGGGCTGTGATTTAAATAGTTGCAGCATGCCATTGGGAATGGAGAGTAAAGCAATA
 TCAGATGCACAGATTACTGCTTCATCTACTTTACCAATATGTTTGCCACCTGGTCTCCTTCAAAGCTCGACTTCACCT
 CCAAGGGAGGAGTAATGCCTGGAGACCTCAGGTGAATAATCCAAAGAGTGGCTGCAAGTGGACTTCAGAAGACAATGA
 AAGTCACAGGAGTAATACTCAGGGAGTAAATCTCTGCTTACCAGCATGTATGTGAAGGAGTTCCTCATCTCCAGCAGT
 CAAGATGGCCATCAGTGGACTCTCTTTTTTTCAGAATGGCAAAGTAAAGGTTTTTCAGGGAAATCAAGACTCCTTCACACC
 TGTGGTGAACCTCTCTAGACCCACCGTTACTGACTCGCTACCTTCGAATTCACCCCCAGAGTTGGGTGCACCAGATTGCCC
 TGAGGATGGAGGTTCTGGGCTGCGAGGCACAGGACCTCTACTGACTCGAGAATAAAAGATCAGAGCTCTAGAGATCTGTG
 TGTGTTGTTTTTGTGTGCGGCCGAGGAACCCCTAGTGATGGAGTTGGCCACTCCCTCTCTGCGCGCTCGCTCGCTCACT
 GAGGCCGGGGACCAAAGGTCGCCCCGACGCCCCGGGCTTTGCCGGGGCGGCTCAGTGAGCGAGCGAGCGCGCAGCTGCCT
 GCAGGACATGTGAGCAAAGGCCAGCAAAGGCCAGGAACCGTAAAAAGGCCGCGTTGCTGGCGTTTTTCCATAGGCTCC
 GCCCCCTGACGAGCATCACAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCG
 TTTCCCCCTGGAAGCTCCCTCGTGCCTCTCCTGTTCCGACCTGCCGCTTACCGGATACCTGTCCGCCCTTCTCCCTTC
 GGAAGCGTGGCGCTTTCTCATAGCTCAGCTGTAGGTATCTCAGTTCCGTGTAGGTGCTTCCGCTCCAAGCTGGGCTGTG
 TGCACGAACCCCCCGTTAGCCCCGACCGCTGCGCCTTATCCGGTAACATATCGTCTTGAGTCCAACCCGGTAAGACACGAC
 TTATCGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTTGAAGTG
 GTGGCCTAACTACGGCTACACTAGAAGGACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTCGGAAAAAGAG
 TTGGTAGCTCTTGATCCGGCAAACAACACCGCTGGTAGCGGTGGTTTTTTTGTGTTGCAAGCAGCAGATTACGCGCAGA
 AAAAAAGGATCTCAAGAAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGGAACGAAAACCTCACGTTAAGGGAT

FIG. 5B

TTTGGTCATGAGATTATCAAAAAGGATCTTCACCTAGATCCTTTTAAATTAAAAATGAAGTTTTAAATCAATCTAAAGTA
TATATGAGTAACTTGGTCTGACAGTTACCAATGCTTAATCAGTGAGGCACCTATCTCAGCGATCTGTCTATTTTCGTTC
TCCATAGTTGCCTGACTCCCCGTCGTGTAGATAACTACGATACGGGAGGGCTTACCATCTGGCCCCAGTGCTGCAATGAT
ACCGCGAGACCCACGCTCACC GGCTCCAGATTTATCAGCAATAAACCAGCCAGCCGGAAGGGCCGAGCGCAGAAGTGGTC
CTGCAACTTTATCCGCCTCCATCCAGTCTATTAATTGTTGCCGGAAGCTAGAGTAAGTAGTTCGCCAGTTAATAGTTTTG
CGCAACGTTGTTGCCATTGCTACAGGCATCGTGGTGTACGCTCGTCTTGGTATGGCTTCATTAGCTCCGGTTCCTCA
ACGATCAAGGCGAGTTACATGATCCCCATGTTGTGCAAAAAAGCGGTTAGCTCCTTCGGTCTCCGATCGTTGTGAGAA
GTAAGTTGGCCGAGTGTTATCACTCATGGTTATGGCAGCACTGCATAATTCTCTTACTGTCATGCCATCCGTAAGATGC
TTTTCTGTGACTGGTGAGTACTCAACCAAGTCATTCTGAGAATAGTGTATGCGGCGACCGAGTTGCTCTTGCCCGGCGTC
AATACGGGATAATACCGCGCCACATAGCAGAACCTTTAAAAGTGCTCATCATTGGAAAACGTTCTTCGGGGCGAAAACCTCT
CAAGGATCTTACCGCTGTTGAGATCCAGTTCGATGTAACCCACTCGTGCACCCAACTGATCTTCAGCATCTTTTACTTTT
ACCAGCGTTTCTGGGTGAGCAAAAAAGGAAGGCAAAATGCCGCAAAAAAGGGAATAAGGGCGACACGGAAATGTTGAAT
ACTCATACTCTTCTTTTTTCAATATTATTGAAGCATTTATCAGGGTTATTGTCTCATGAGCGGATACATATTTGAATGTA
TTAGAAAAATAACAAATAGGGGTTCGCGCACATTTCCCCGAAAAGTGCCACCTGACGTCTAAGAAACCATTTATTATC
ATGACATTAACCTATAAAAAATAGGCGTATCACGAGGCCCTTCGTCTCGCGCGTTTCGGTGATGACGGTGAAAACCTCTG
ACACATGCAGCTCCCGGAGACGGTCACAGCTTGTCTGTAAGCGGATGCCGGGAGCAGACAAGCCCGTCAGGGCGCGTCAG
CGGTGTTGGCGGGTGTGCGGGCTGGCTTAATATGCGGCATCAGAGCAGATTGTACTGAGAGTGCACCATAAAATTGTA
AACGTTAATATTTTGTAAATTCGCGTTAAATTTTGTAAATCAGCTCATTTTTTAAACCAATAGGCCGAAATCGGCAA
AATCCCTTATAAATCAAAGAATAGCCGAGATAGGGTTGAGTGTGTTCCAGTTTGAACAAGAGTCCACTATTAAAGA
ACGTGGACTCCAACGTCAAAGGGCGAAAAACCGTCTATCAGGGCGATGGCCCACTACGTGAACCATCACCCAAATCAAGT
TTTTTGGGGTTCGAGGTGCCGTAAAGCACTAAATCGGAACCTAAAGGGAGCCCCGATTTAGAGCTTGACGGGGAAAGCC
GGCGAACGTGGCGAGAAAGGAAGGGAAGAAAGCGAAAGGAGCGGGCGCTAGGGGCGTGGAAGTGTAGCGGTACAGCTGC
GCGTAACCACCACACCCGCGCGCTTAATGCGCGCTACAGGGCGGTACTATGGTTGCTTTGACGTATGCGGTGTGAAA
TACCGCACAGATGCGTAAGGAGAAAAATACCGCATCAGGCCGTAACTGTGCGATCACCGGAAAGGACCCGTAAAGTGATA
ATGATTATCATCTACATATCACAACGTGCGTGGAGGCCATCAAACCACGTCAAATAATCAATTATGACGCGAGGTATCGTA
TTAATTGATCTGCATCAACTTAACGTAAAAACAACCTTCAGACAATACAAATCAGCGACACTGAATACGGGGCAACCTCAT
GTCAACGAAGAACAGAACCCGCGAGAACAACAACCCGCAACATCCGCTTTCCTAACCAAAATGATTGAACAAATTAACATCG
CTCTTGAGCAAAAAGGGTCCGGGAATTTCTCAGCCTGGGTTCATTGAAGCCTGCCGTGCGAGACTAACGTGAGAAAAGAGA
GCATATACATCAATTAAAAGTGATGAAGAATGAACATCCCGCGTTCTTCCCTCCGAACAGGACGATATTGTAAATTCAT
TAATTACGAGGGCATTCAGTAATTGAGTTGCAGTTTTACCCTTTCTGACAGTGACAGACTGCGTGTGGCTCTGTCA
CAGACTAAATAGTTTGAATGATTAGCAGTTATGGTGATCAGTCAACCACCAGGGAATAATCCTTCATATTATTATCGTGC
TTCACCAACGCTGCCTCAATTGCTCTGAATGCTTCAGAGACACCTTATGTTCTATACATGCAATTACAACATCAGGGTA
ACTCATAGAAATGGTGCTATTAAGCATATTTTTTACACGAATCAGATCCACGGAGGGATCATCAGCAGATTGTTCTTTAT
TCATTTTGTGCTCCATGCGCTTGTCTTCATCTAGCGGTTAAATATTACTTCAAATCTTTCTGTATGAAGATTGAGC
ACGTTGGCCTTACATACATCTGTGCGTTGTATTTCCCTCCAGAATGCCAGCAGGACCGCACTTTGTTACGCAACCAATAC
TATTAAGTGAAAACATTCCCTAATATTTGACATAAATCATCAACAAAACACAAGGAGGTGAGACCAGATTGAAACGATAAA
AACGATAATGCAAACTACGCGCCCTCGTATCACATGGAAGGTTTTACCAATGGCTCAGGTTGCCATTTTTTAAAGAAATAT
TCGATCAAGTGCGAAAAGATTTAGACTGTGAATTGTTTTATTCTGAACTAAAACGTCAACACGTCTCACATTATATTAC
TATCTAGCCACAGATAATATTACATCGTGTAGAAAACGATAACACCGTGTAAATAAAAGGACTTAAAAGGTTGTAAA
TGTTAAATTTCTAAGAAACACGCATCTTATAGAAACGTCCTATGATAGGTTGAAATCAAGAGAAATCACATTTACGCAAT
ACAGGGAAAATCTTGCTAAAGCAGGAGTTTTCCGATGGGTTACAAATATCCATGAACATAAAAGATATTACTATACCTTT

FIG. 5C

GATAATTCATTACTATTTACTGAGAGCATTGAGAACACTACACAAATCTTTCCACGCTAAATCATAACGTCCGGTTTCTT
CCGTGTGTCAGCACCAGGGCGTTGGCATAATGCAATACGTGTACGCGCTAAACCCTGTGTGCATCGTTTTAATTATTCACCGG
ACACTCCCGCAGAGAAGTTCCCCGTCAGGGCTGTGGACATAGTTAATCCGGAATACAATGACGATTCATCGCACCTGAC
ATACATTAATAAATATTAACAATATGAAATTTCAACTCATTGTTTAGGGTTTGTTTAATTTTCTACACATACGATTCTGC
GAACTTCAAAAAGCATCGGGAATAACACCATGAAAAAATGCTACTCGCTACTGCGCTGGCCCTGCTTATTACAGGATGT
GCTCAACAGACGTTTACTGTTCAAAACAAACCGGCAGCAGTAGCACCAAAGGAAACCATCACCCATCATTTCTTCGTTTC
TGGAATTGGGCAGAAGAAAACGTGTCGATGCAGCCAAAATTTGTGGCGGCGCAGAAAATGTTGTTAAAAACAGAAACCCAGC
AAACATTCGTAAATGGATTGCTCGGTTTTATTACTTTAGGCATTTATACTCCGCTGGAAGCGCGTGTGTATTGCTCACAA
TAATTCATGAGTTGCCCATCGCGATATGGGCAACTCTATCTGCACTGCTCATTAATATACTTCTGGGTTCCCTTCAGTT
GTTTTTGCATAGTGATCAGCCTCTCTCTGAGGGTGAAATAATCCCGTTCAGCGGTGTCTGCCAGTCGGGGGGAGGCTGCA
TTATCCACGCCCGAGGCGGTGGTGGCTTCACGCACTGACTGACAGACTGCTTTGATGTGCAACCGACGACGACGACGCGG
AACATCATCAGCAGAGCATCATTTTCAGCTTTAGCATCAGCTAACTCCTTCGTGTATTTTGCATCGAGCGCAGCAACAT
CACGCTGACGCATCTGCATGTCAGTAATTGCCGCGTTCGCCAGCTTCAGTTCTCTGGCATTTTTGTGCGCTGGGCTTTG
TAGGTAATGGCGTTATCACGGTAATGATTAACAGCCCATGACAGGCAGACGATGATGCAGATAACCAGAGCGGAGATAAT
CGCGGTGACTCTGCTCATAATCAATCTCTGACCGTTCCGCCGCTTCTTTGAATTTTGCATCAGGCTGTGACGCTT
ATGCTCGAACTGACCATAACCAGCGCCCGCAGTGAAGCCCAGATATTGCTGCAACGGTCGATTGCCTGACGGATATCAC
CACGATCAATCATAGGTAAAGCGCCACGCTCCTTAATCTGCTGCAATGCCACAGCGTCCTGACTTTTCGGAGAGAAGTCT
TTCAGGCCAAGCTGCTTGCGGTAGGCATCCACCAACGGGAAGAAGCTGGTAGCGTCCGGCGCCTGTTGATTGAGTTT
TGGGTTTAGCGTGACAAGTTTGGGAGGTGATCGGAGTAATCAGTAAATAGCTCTCCGCTACAATGACGTCATAACCAT
GATTTCTGTTTTTCTGACGTCCGTTATCAGTTCCCTCCGACCACGCCAGCATATCGAGGAACGCCTTACGTTGATTATTG
ATTTCTACCATCTTCTACTCCGGCTTTTTTAGCAGCGAAGCGTTTGATAAGCGAACCAATCGAGTCAGTACCGATGTAGC
CGATAAACACGCTCGTTATATAAGCGAGATTGCTACTTAGTCCGGCGAAGTCGAGAAGGTCACGAATGAACCAGGCGATA
ATGGCGCACATCGTTGCGTCGATTACTGTTTTTGTAAACGCACCGCCATTATATCTGCCGCGAAGGTACGCCATTGCAAA
CGCAAGGATTGCCCCGATGCCTTGTTCCTTTGCCGCGAGAATGGCGGCCAACAGGTCATGTTTTTCTGGCATCTTCATGT
CTTACCCCCAATAAGGGGATTTGCTCTATTTAATTAGGAATAAGGTCGATTACTGATAGAACAATCCAGGCTACTGTGT
TTAGTAATCAGATTTGTTTCGTGACCGATATGCACGGGCAAAACGGCAGGAGGTGTTAGCGCGACCTCCTGCCACCCGCT
TTCACGAAGGTCATGTGTAAAAGGCCGACGTAACCTATTACTAATGAATTCAGGACAGACAGTGGCTACGGCTCAGTTT
GGGTTGTGCTGTTGCTGGGCGCGATGACGCCTGTACGCATTTGGTGATCCGGTTCTGCTTCCGGTATTGCTTAATTCA
GCACAACGGAAAGAGCACTGGCTAACCAGGCTCGCCGACTCTTCACGATTATCGACTCAATGCTCTTACCTGTTGTGCAG
ATATAAAAAATCCCGAAACCGTTATGCAGGCTCTAACTATTACCTGCGAACTGTTTCGGGATTGCATTTTGCAGACCTCT
CTGCCTGCGATGGTTGGAGTTCCAGACGATACGTGGAAGTGACCAACTAGGCGGAATCGGTAGTAAGCGCCGCTCTTTT
CATCTCACTACCACAACGAGCGAATTAACCCATCGTTGAGTCAAATTTACCCAATTTTATTCAATAAGTCAATATCATGC
CGTTAATATGTTGCCATCCGTGGCAATCATGCTGCTAACGTGTGACCGCATTCAAAATGTTGTCTGCGATTGACTCTTCT
TTGTGGCATTGCACCACCAGAGCGTCATACAGCGGCTTAACAGTGCGTGACCGGTGGGTGGGTAAGGTTTGGGATTAG
CATCGTCACAGCGGATATGCTGCGCTTGCTGGCATCCTTGAATAGCCGACGCTTTCATCTTCCGCACTCTTCTCGA
CAACTCTCCCCACAGCTCTGTTTTGGCAATATCAACCGCACGGCCTGTACCATGGCAATCTCTGCATCTTGGCCCCGGC
GTCGCGGCACTACGGCAATAATCCGCATAAGCGAATGTTGCGAGCACTTGCAGTACCTTTGCCTTAGTATTTCTTCAAG
CTGCCCCCTGCAGG

FIG. 5D

FIG. 6A
FIG. 6B
FIG. 6C

FIG. 6

CGCCCCCTGCAGGCAGCTGCGCGCTCGCTCGCTCACTGAGGCCGCCCGGGCAA
AGCCCGGGCGTCGGGCGACCTTTGGTCGCCCCGGCCTCAGTGAGCGAGCGAGC
GCGCAGAGAGGGAGTGGCCAACTCCATCACTAGGGGTTCCTGCGGCCGCACG
CGTGGTGGCGCGGGGTAAACTGGGAAAGTGATGTCGTGTACTGGCTCCGCCT
TTTTCCCGAGGGTGGGGGAGAACCGTATATAAGTGCAGTAGTCGCCGTGAAC
GTTCTTTTTTCGCAACGGGTTTGCCGCCCGCGGCAGGTAAGTGCCAGGGAAT
GTTTGTTCTTAAATACCATCGCTCCAGGGAATGTTTGTTCTTAAATACCATC
TACTGACACTGACATCCACTTTTTCTTTTTCTCCACAGGTATCGATCCACCA
TGCAAATAGAGCTCTCCACCTGCTTCTTTCTGTGCCTTTTGCGATTCTGCTT
TAGTGCCACCAGAAGATACTACCTGGGTGCAGTGGAAGTGTGATGGGACTAT
ATGCAAAGTGATCTCGGTGAGCTGCCTGTGGACGCAAGATTTCTCCTAGAG
TGCCAAAATCTTTTCCATTCAACACCTCAGTCGTGTACAAAAGACTCTGTT
TGTTAGAATTCACGGATCACCTTTTCAACATCGCTAAGCCAAGGCCACCCTGG
ATGGGTCTGCTAGGTCTTACCATCCAGGCTGAGGTTTATGATACAGTGGTCA
TTACACTTAAGAACATGGCTTCCCATCCTGTCAGTCTTCATGCTGTTGGTGT
ATCCTACTGGAAAGCTTCTGAGGGAGCTGAATATGATGATCAGACCAGTCAA
AGGGAGAAAGAAGATGATAAAGTCTTCCCTGGTGGAAAGCCATACATATGTCT
GGCAGGTCCTGAAAGAGAATGGTCCAATGGCCTCTGACCCACTGTGCCTTAC
CTACTCATATCTTTCTCATGTGGACCTGGTAAAAGACTTGAATTCAGGCCTC
ATTGGAGCCCTACTAGTATGTAGAGAAGGGAGTCTGGCCAAGGAAAAGACAC
AGACCTTGACAAAATTTATACTACTTTTTGCTGTATTTGATGAAGGGAAAAG
TTGGCACTCAGAAACAAAGAACTCCTTGATGCAGGATAGGGATGCTGCATCT
GCTCGGGCCTGGCCTAAAATGCACACAGTCAATGGTTATGTAAACAGGTCTC
TGCCAGGTCTGATTGGATGCCACAGGAAATCAGTCTATTGGCATGTGATTGG
AATGGGCACCCTCCTGAAGTGCACCTCAATATTCCTCGAAGGTCACACATTT
CTTGTTGAGGAACCATCGCCAGGCGTCCTTGGAATCTCGCCAATAACTTTCC
TTACTGCTCAAACACTCTTGATGGACCTTGGACAGTTTCTACTGTTTTGTCA
TATCTCTTCCCACCAACATGATGGCATGGAAGCTTATGTCAAAGTAGACAGC
TGTCCAGAGGAACCCCAACTACGAATGAAAAATAATGAAGAAGCGGAAGACT
ATGATGATGATCTTACTGATTCTGAAATGGATGTGGTCAGGTTTGATGATGA
CAACTCTCCTTCCTTTATCCAAATTCGCTCAGTTGCCAAGAAGCATCCTAAA

FIG. 6A

ACTTGGGTACATTACATTGCTGCTGAAGAGGAGGACTGGGACTATGCTCCCT
TAGTCCTCGCCCCCGATGACAGAAGTTATAAAAGTCAATATTTGAACAATGG
CCCTCAGCGGATTGGTAGGAAGTACAAAAAGTCCGATTTATGGCATAACACA
GATGAAACCTTTAAGACTCGTGAAGCTATTCAGCATGAATCAGGAATCCTTGG
GACCTTTACTTTTATGGGGAAGTTGGGAGACACACTGTTGATTATATTTAAGAA
TCAAGCAAGCAGACCATATAACATCTACCCTCACGGAATCACTGATGTCCGT
CCTTTGTATTCAAGGAGATTACCAAAGGTGTAAAACATTTGAAGGATTTTC
CAATTCTGCCAGGAGAAATATTCAAATATAAATGGACAGTGAAGTGTAGAAGA
TGGGCCAACTAAATCAGATCCTCGGTGCCTGACCCGCTATTACTCTAGTTTC
GTTAATATGGAGAGAGATCTAGCTTCAGGACTCATTGGCCCTCTCCTCATCT
GCTACAAAGAATCTGTAGATCAAAGAGGAAACCAGATAATGTCAGACAAGAG
GAATGTCATCCTGTTTTCTGTATTTGATGAGAACCGAAGCTGGTACCTCACA
GAGAATATACAACGCTTTCTCCCCAATCCAGCTGGAGTGCAGCTTGAGGATC
CAGAGTTCCAAGCCTCCAACATCATGCACAGCATCAATGGCTATGTTTTTGA
TAGTTTGCAGTTGTCAGTTTGTTCATGAGGTGGCATACTGGTACATTCTA
AGCATTGGAGCACAGACTGACTTCCTTTCTGTCTTCTTCTCTGGATATACCT
TCAAACACAAAATGGTCTATGAAGACACACTCACCTTATTTCCATTTCTCAGG
AGAACTGTCTTCATGTCGATGGAAAACCCAGGTCTATGGATTCTGGGGTGC
CACAACCTCAGACTTTCGGAACAGAGGCATGACCGCCTTACTGAAGGTTTCTA
GTTGTGACAAGAACACTGGTGATTATTACGAGGACAGTTATGAAGATATTTTC
AGCATACTTGCTGAGTAAAAACAATGCCATTGAACCAAGAAGCTTCTCCCAG
AATCCACCAGTCTTGAAACGCCATCAACGCGAAATAACTCGTACTACTCTTC
AGTCAGATCAAGAGGAAATTGACTATGATGATACCATATCAGTTGAAATGAA
GAAGGAAGATTTTGACATTTTATGATGAGGATGAAAATCAGAGCCCCCGCAGC
TTTCAAAGAAAACACGACACTATTTTATTGCTGCAGTGGAGAGGCTCTGGG
ATTATGGGATGAGTAGCTCCCCACATGTTCTAAGAAACAGGGCTCAGAGTGG
CAGTGTCCCTCAGTTCAAGAAAGTTGTTTTCCAGGAATTTACTGATGGCTCC
TTTACTCAGCCCTTATACCGTGGAGAACTAAATGAACATTTGGGACTCCTGG
GGCCATATATAAGAGCAGAAGTTGAAGATAATATCATGGTAACCTTCAGAAA
TCAGGCCTCTCGTCCCTATTCCTTCTATTCTAGCCTTATTTCTTATGAGGAA
GATCAGAGGCAAGGAGCAGAACCTAGAAAAAACTTTGTCAAGCCTAATGAAA
CCAAAACCTTACTTTTTGGAAAGTGCAACATCATATGGCACCCACTAAAGATGA
GTTTGACTGCAAAGCCTGGGCTTATTTCTCTGATGTTGACCTGGAAAAAGAT
GTGCACTCAGGCCTGATTGGACCCCTTCTGGTCTGCCACACTAACACACTGA
ACCCTGCTCATGGGAGACAAGTGACAGTACAGGAATTTGCTCTGTTTTTCAC
CATCTTTGATGAGACCAAAGCTGGTACTTCACTGAAAATATGGAAAGAAAC
TGCAGGGCTCCCTGCAATATCCAGATGGAAGATCCCACTTTTAAAGAGAATT
ATCGCTTCCATGCAATCAATGGCTACATAATGGATACACTACCTGGCTTAGT
AATGGCTCAGGATCAAAGGATTCGATGGTATCTGCTCAGCATGGGCAGCAAT

FIG. 6B

GAAAACATCCATTCTATTCATTTTCAGTGGACATGTGTTCACTGTACGAAAAA
AAGAGGAGTATAAAATGGCACTGTACAATCTCTATCCAGGTGTTTTTGAGAC
AGTGGAAATGTTACCATCCAAAGCTGGAATTTGGCGGGTGAATGCCTTATT
GGCGAGCATCTACATGCTGGGATGAGCACACTTTTTCTGGTGTACAGCAATA
AGTGTTCAGACTCCCCTGGGAATGGCTTCTGGACACATTAGAGATTTTCAGAT
TACAGCTTCAGGACAATATGGACAGTGGGCCCCAAAGCTGGCCAGACTTCAT
TATTCCGGATCAATCAATGCCTGGAGCACCAAGGAGCCCTTTTTCTTGATCA
AGGTGGATCTGTTGGCACCAATGATTATTCACGGCATCAAGACCCAGGGTGC
CCGTCAGAAGTTCTCCAGCCTCTACATCTCTCAGTTTATCATCATGTATAGT
CTTGATGGGAAGAAGTGGCAGACTTATCGAGGAAATTCCACTGGAACCTTAA
TGGTCTTCTTTGGCAATGTGGATTCTCTGGGATAAAACACAATATTTTTAA
CCCTCCAATTATTGCTCGATACATCCGTTTGCACCCAACTCATTATAGCATT
CGCAGCACTCTTCGCATGGAGTTGATGGGCTGTGATTTAAATAGTTGCAGCA
TGCCATTGGGAATGGAGAGTAAAGCAATATCAGATGCACAGATTACTGCTTC
ATCCTACTTTACCAATATGTTTGGCACCTGGTCTCCTTCAAAAGCTCGACTT
CACCTCCAAGGGAGGAGTAATGCCTGGAGACCTCAGGTGAATAATCCAAAAG
AGTGGCTGCAAGTGGACTTCCAGAAGACAATGAAAGTCACAGGAGTAACTAC
TCAGGGAGTAAAATCTCTGCTTACCAGCATGTATGTGAAGGAGTTCCTCATC
TCCAGCAGTCAAGATGGCCATCAGTGGACTCTCTTTTTTTCAGAATGGCAAAG
TAAAGGTTTTTCAGGGAAATCAAGACTCCTTCACACCTGTGGTGAACCTCTCT
AGACCCACCGTTACTGACTCGCTACCTTCGAATTCACCCCCAGAGTTGGGTG
CACCAGATTGCCCTGAGGATGGAGGTTCTGGGCTGCGAGGCACAGGACCTCT
ACTGACTCGAGCCTAATAAAGGAAATTTATTTTCATTGCAATAGTGTGTTGG
TTTTTTGTGTGCGGCCGCGAGGAACCCCTAGTGATGGAGTTGGCCACTCCCTC
TCTGCGCGCTCGCTCGCTCACTGAGGCCGGGCGACCAAAGGTCGCCCCGACGC
CCGGGCTTTGCCCCGGGCGGCCTCAGTGAGCGAGCGAGCGCGCAGCTGCCTGC
AGGACAT

FIG. 6C

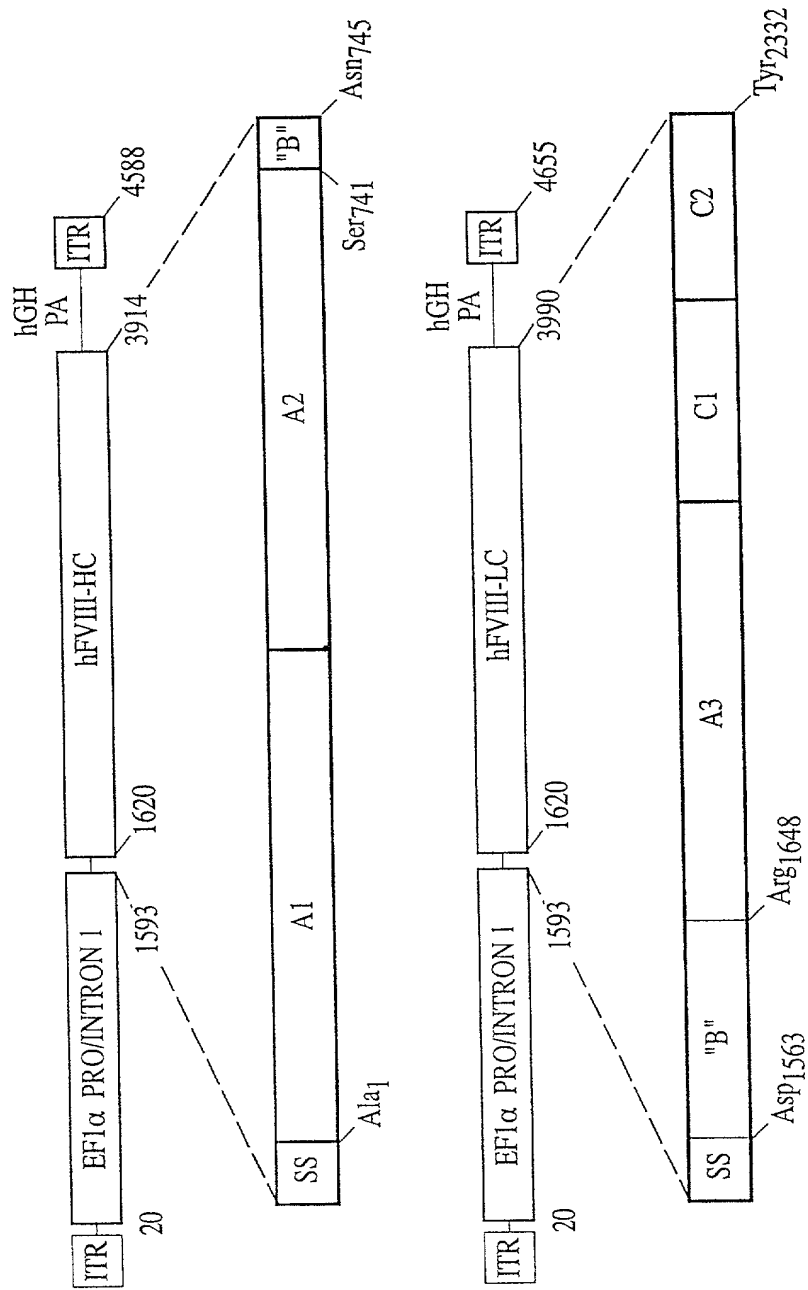


FIG. 7

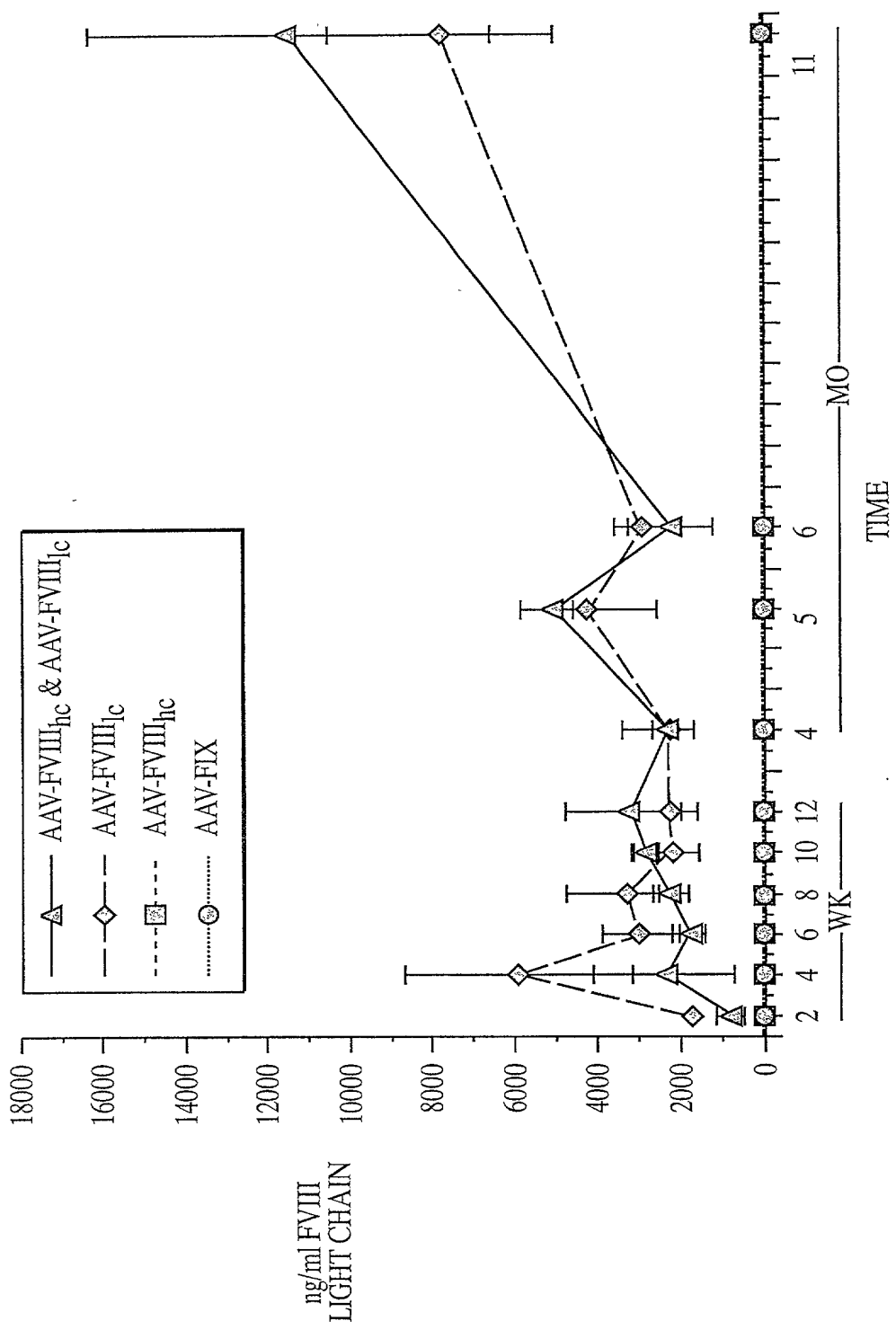


FIG. 8

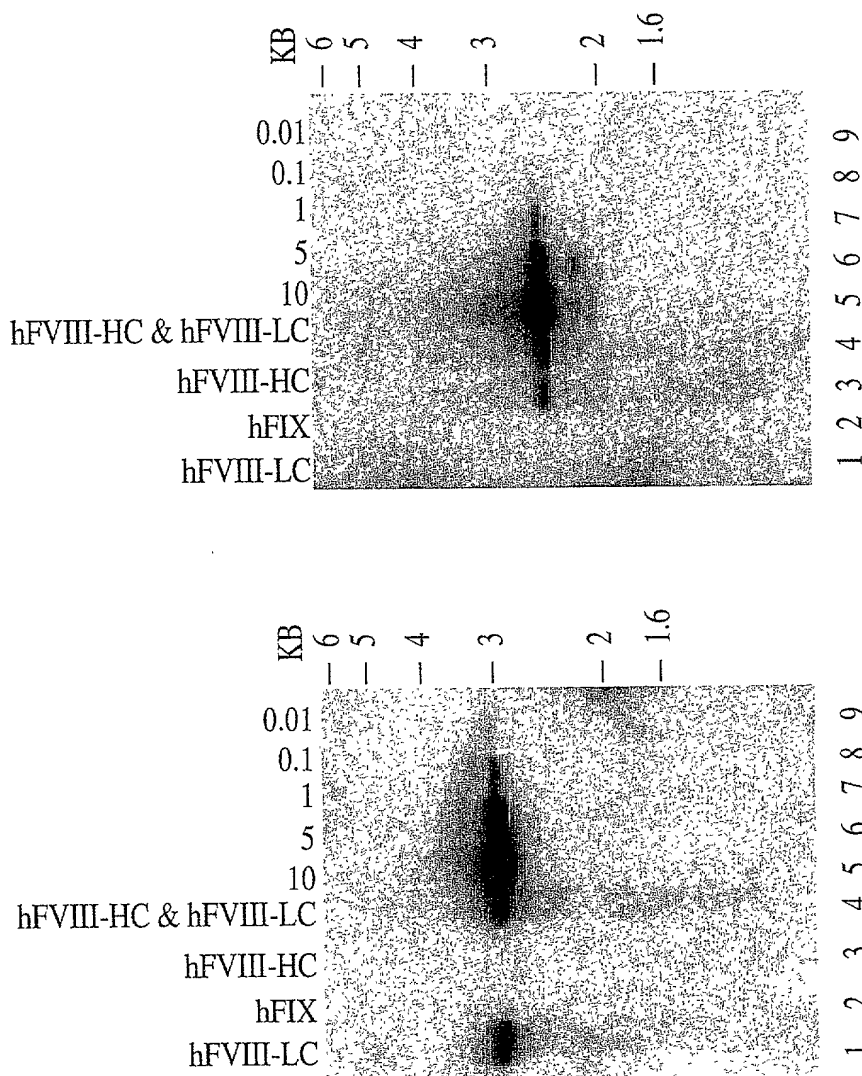


FIG. 9A

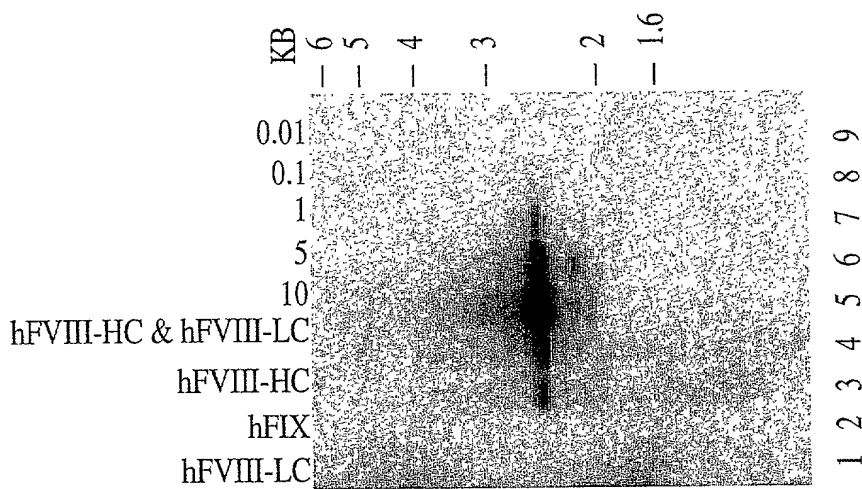


FIG. 9B

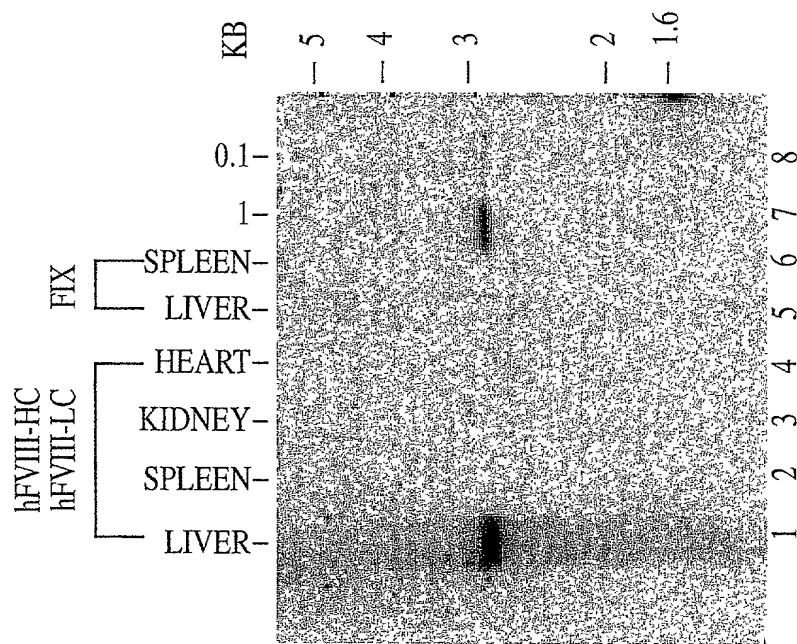


FIG. 10A

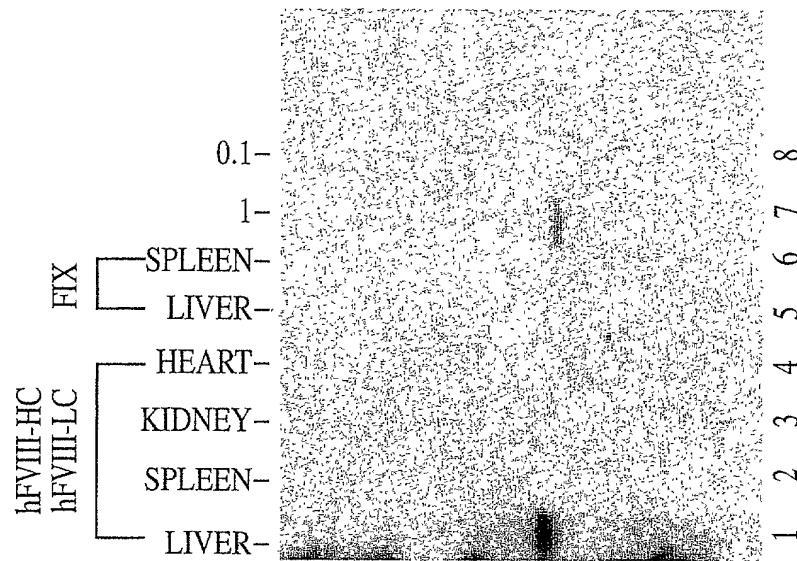


FIG. 10B

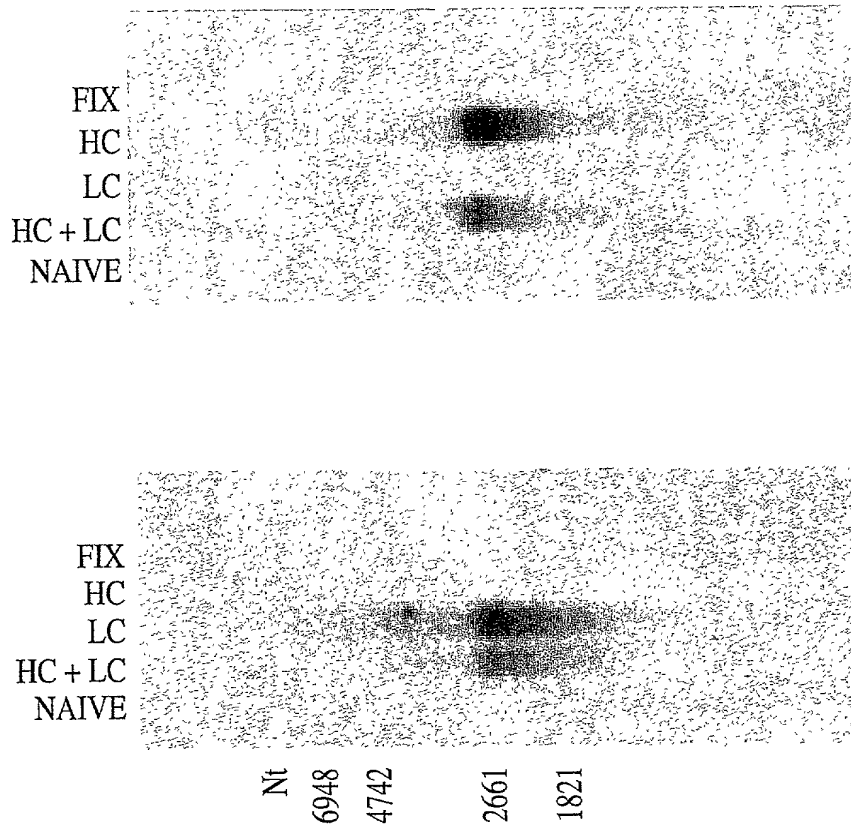


FIG. 11B

FIG. 11A